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BIOLOGICAL EVALUATION OF A PROPOSED DWARF MISTLETOE CONTROL PROJECT ON THE MOUNTAIN VIEW DISTRICT, WASATCH NATIONAL FOREST, UTAH

By
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INTRODUCTION

On August 4, 1982, Pathologist LaGrande Hobbs and Biological Technician Paul Fredrick of Forest Pest Management (FPM), visited the Pushover area of the Mountain View RD to evaluate a proposed dwarf mistletoe (DM) control project to be carried out along the edge of the new stand and also to remove two small islands of old infected trees in the pushed-over area. Twenty-one 1/300th acre plots were established at 2-chain intervals along random lines through two of the areas along the edge designated as unit 1 and 4. Unit 1 is to the right of the road entering the Pushover area from the east. Unit 4 is at the far south end. (Location of these units and others can be determined on aerial photos at the Mountain View RD office.) Overstory and understory trees were counted and infected understory trees noted. Height and d.b.h. of understory trees were also recorded. One other area (unit 3) along the edge was also inspected without establishing plots. Unit 3 is just north of unit 1. Three plots were established in one small island of infected trees (unit 2) and the perimeter of the island was examined to determine if DM has spread to the regeneration in the pushed-over area.

TECHNICAL INFORMATION

Causal Agent: Lodgepole pine dwarf mistletoe, Arceuthobium americanum Nutt. ex Engelm.
Host: Lodgepole pine, Pinus contorta Engelm. (LPP)
Type of Damage: Growth reduction is occurring in the infected overstory but is not yet occurring in the understory. The potential exists for increased infection of the understory leading to growth reduction, lowering of wood quality and possible mortality.

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EXPERIMENT STATION

STAND AND DISEASE DATA

Units 1 and 4: These two units were similar enough to combine the data. On the basis of 21 1/300th acre plots, it was found that there are 24 infected overstory trees per acre. There are 122 understory trees per acre with 22 per acre infected or about 18 percent. All infected understory trees had only a single branch infected. Diameter breast height of the understory is between 1 inch and 1-1/2 inches and height is 5-6 feet. No non-host trees were found in the plots.

Unit 2: No plots were established in this unit since there was no regeneration. However, most of the rather dense stand is infected.

Unit 3: This is a small island of mature, infected lodgepole pine surrounded by the regenerating Pushover area. Some trees have blown down opening the stand so that lodgepole pine seedlings are becoming established. On the basis of a small sample of only three plots, there are about 144 infected lodgepole pine overstory trees per acre and an equal number of noninfected understory trees. The understory averages less than 4 feet tall. On walking around the edge of the island no DM infection was found in the lodgepole pine saplings of the pushed-over area.

DISCUSSION

At the present time the regeneration in the main body of the Pushover area is virtually free of DM. However, there are two islands of infected trees inside the area and infected trees ring the opening. In some places along the edge some of the overstory has been cut or blown down, so that regeneration is occurring. In other places the mature stand is too dense for regeneration. The islands of infected trees should be cut or girdled to prevent spread of DM into the adjacent regeneration and onto the seedlings coming in below the infected trees.

The overstory should also be removed along the edges of the pushed-over area where there is low volume in the overstory and regeneration is becoming established. In this way there will be protection against spread into the pushover and also protection of the understory coming up in these areas. This is the case in units 1 and 4 and several other places around the edge. Both of the above procedures can justifiably be funded by FPM funds.

In those areas along the edge where there is a relatively dense stand of old trees along the edge and there is no regeneration, use of FPM funds is not justified. The area to edge ratio is high enough so that an increase in area will only have a minor effect on spread into the regeneration. If it is determined that the edges need to be moved back this should be done through regular harvest procedures.

RECOMMENDATIONS

It is recommended that a DM control project be carried out in the Pushover area to remove the islands of infected trees. In addition the overstory should be removed from peninsulas and strips along the outside edge in which regeneration is occurring. In these areas the understory should also be sanitation-thinned.

No DM control funds should be used in areas along the edge where there is no regeneration. The primary purpose of DM control is to protect regeneration from infection. These areas can be cut utilizing regular harvest procedures or through use of timber stand improvement funds.